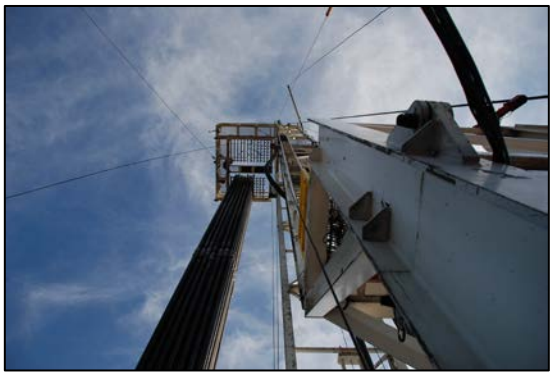
USGS
science for a changing world

Energy Resources

FY 2016 President's Proposed Budget
Total requested increase is $8,549,000

The USGS has long been recognized for its high-quality energy resource research and its assessments of geologically-based energy sources, including coal, oil and gas, uranium, geothermal, and natural gas hydrates. As evolving technologies open up new resource frontiers, the USGS keeps pace delivering cutting-edge, robust, transparent, unbiased research and assessments of the Nation's energy resources.



In 2016, the USGS would start a new effort to compare the characteristics and impacts of unconventional gas development and production in the Marcellus Shale in Pennsylvania and in New York. This research would be tied to an investigation of baseline water quality and produced water disposal practices on the two sides of the border as part of a broader life-cycle analysis.

In 2016, the USGS would also work to emphasize products that contain decision-ready information about the national unconventional oil and gas endowment. With the proposed increase, the USGS would initiate new assessments of undiscovered technically recoverable unconventional oil and gas resources to inform the public about the magnitude and location of the resources and the potential impacts of production.

Pushing the Boundaries on Geothermal Energy

Geothermal resources are a renewable energy source that can provide a steady, uninterrupted power base, but are highly underutilized in this country. With the requested increase, the USGS would evaluate the geology and subsurface characteristics, and build on a very successful recent field test to identify likely areas of potential exploration and development of unconventional geothermal resources. In addition, the USGS would use the proposed increase to continue efforts to assess and monitor geothermal fields in Akutan, Alaska, and the Salton Sea, California for their potential to generate power from geothermal resources for nearby residents and businesses, reducing reliance on other sources of energy.

Alternative Energy Permitting on Federal Lands

This proposed increase allows the USGS to provide science to the agencies responsible for energy resource management on Federal Lands. There is substantial potential for unconventional geothermal resources on Federal lands, but these resources have not yet been thoroughly evaluated. The proposed increase would allow for a focused effort to survey and track the impacts of geothermal development over time, including support for researching induced seismicity related to geothermal development. This will help determine risks and potential mitigation plans, should development be proposed. The Bureau of Land Management and other agencies use this information for land use planning and, potentially, a targeted environmental impact statement for high potential use areas.

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Mineral Resources

FY 2016 President's Proposed Budget
Total requested increase is $999,000

Today, the United States is the world's largest user of mineral commodities, with approximately 25,000 pounds of minerals mined each year per person. Making informed decisions about supply and development of mineral commodities that are critical to our economy and security requires current and reliable information about both mineral resources and the consequences of their development.

USGS addresses these needs by researching and assessing where mineral commodities are known and suspected in the Earth's crust, and collecting, analyzing, and disseminating data that describe current production and consumption of about 100 mineral commodities, both domestically and internationally for approximately 180 countries.

Critical Minerals for the Nation's Economic Vitality

The 2016 request for the Mineral Resources Program will be used to continue life-cycle analysis for critical minerals such as rare earth elements. A life-cycle analysis will trace the flow of these critical minerals from generation and occurrence through interaction with society and the environment to ultimate disposition and disposal.

In addition to national security and economic vitality, critical minerals research is important to the President's focus on protecting the environment. This budget request builds on critical minerals research begun in 2015 that fosters better understanding of the environmental consequences of mining, such as the impacts of metal mixtures in mineralized drainage, mineral levels in the built and waste stream environments, geochemical composition of soil, and the impacts of mining on human health.

R&D to Address Environmental Impacts of Minerals Development

The 2016 request will allow for the focus of efforts on development of new science and tools to reduce the impacts of minerals extraction, production, and recycling on the global environment and human health, including research on supply chain, life cycle, resource sustainability, and minimizing environmental impacts of mineral extraction.

This additional funding will allow for enhanced work on: toxicity of multiple metals associated with platinum group deposits; trace metal mobility in the Yellow Pine mining district, Idaho; groundwater quality in uranium mining; geo-environmental health models of mineral deposits; geo-environmental signatures of rare earth element deposits in Alaska; and refinement of national geo-environmental models.

Other environmental activities include efforts to better understand emerging environmental geochemical challenges for future mining, and the uses, characteristics, and environmental health implications of metal and mineral commodities in the built environment.